

FIG. 1
(Prior Art)

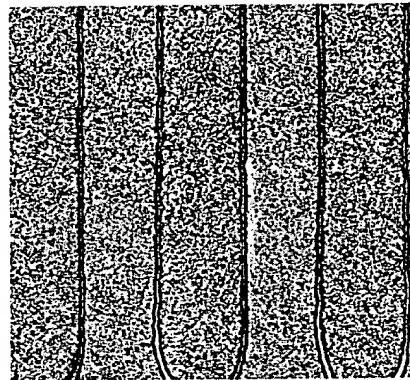


FIG. 2(a) (Prior Art)

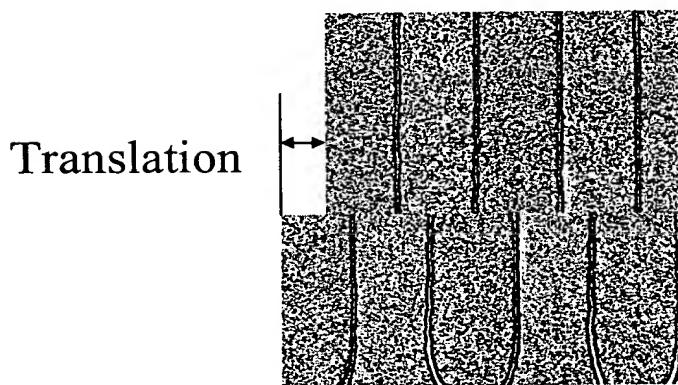


FIG. 2(b) (Prior Art)

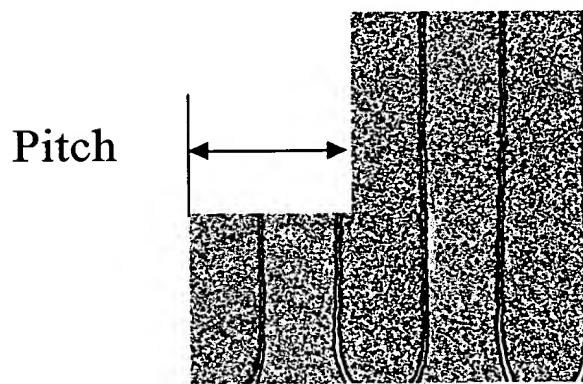


FIG. 2(c) (Prior Art)

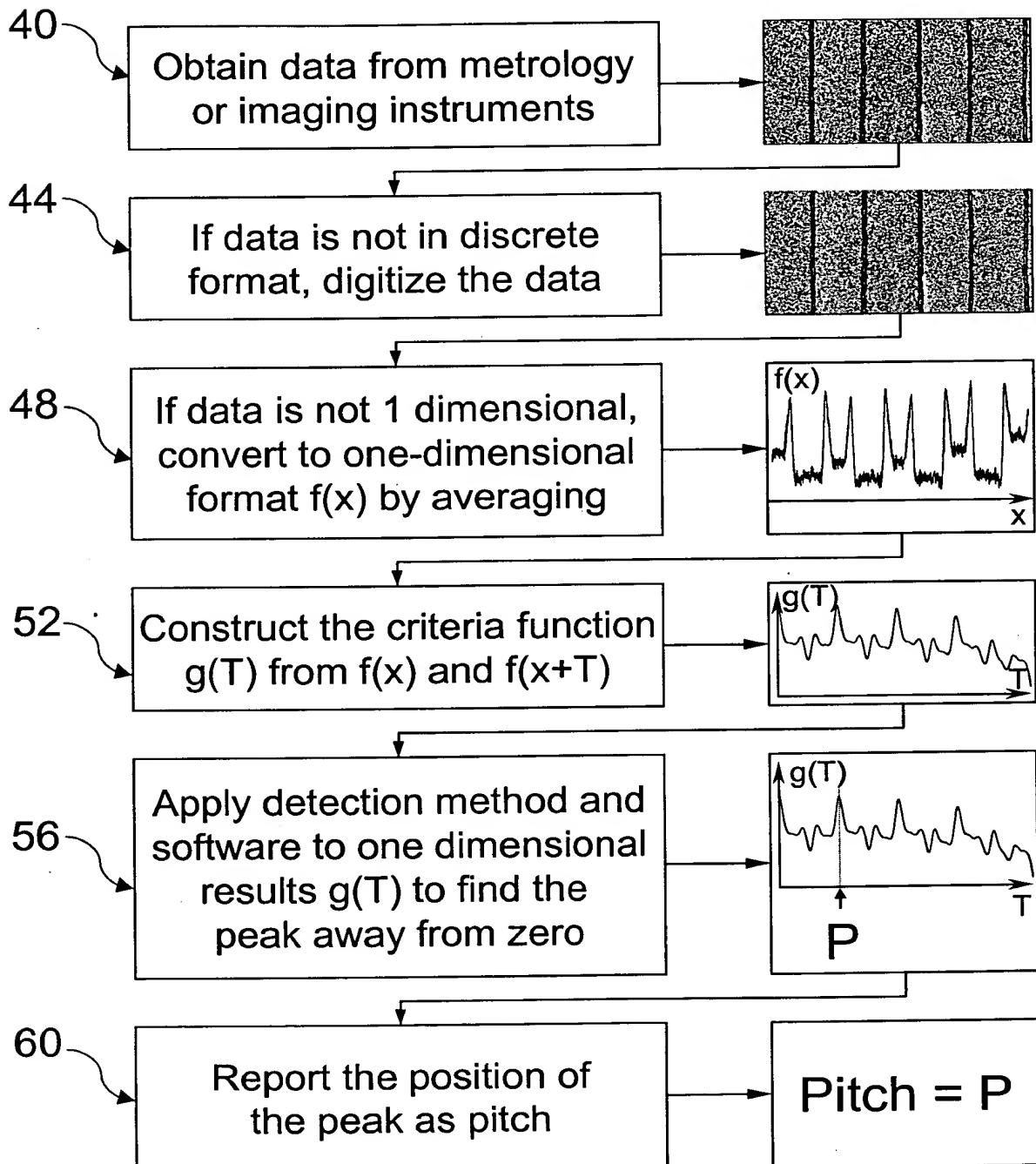


FIG. 3

FIG. 4 - FLOWCHART

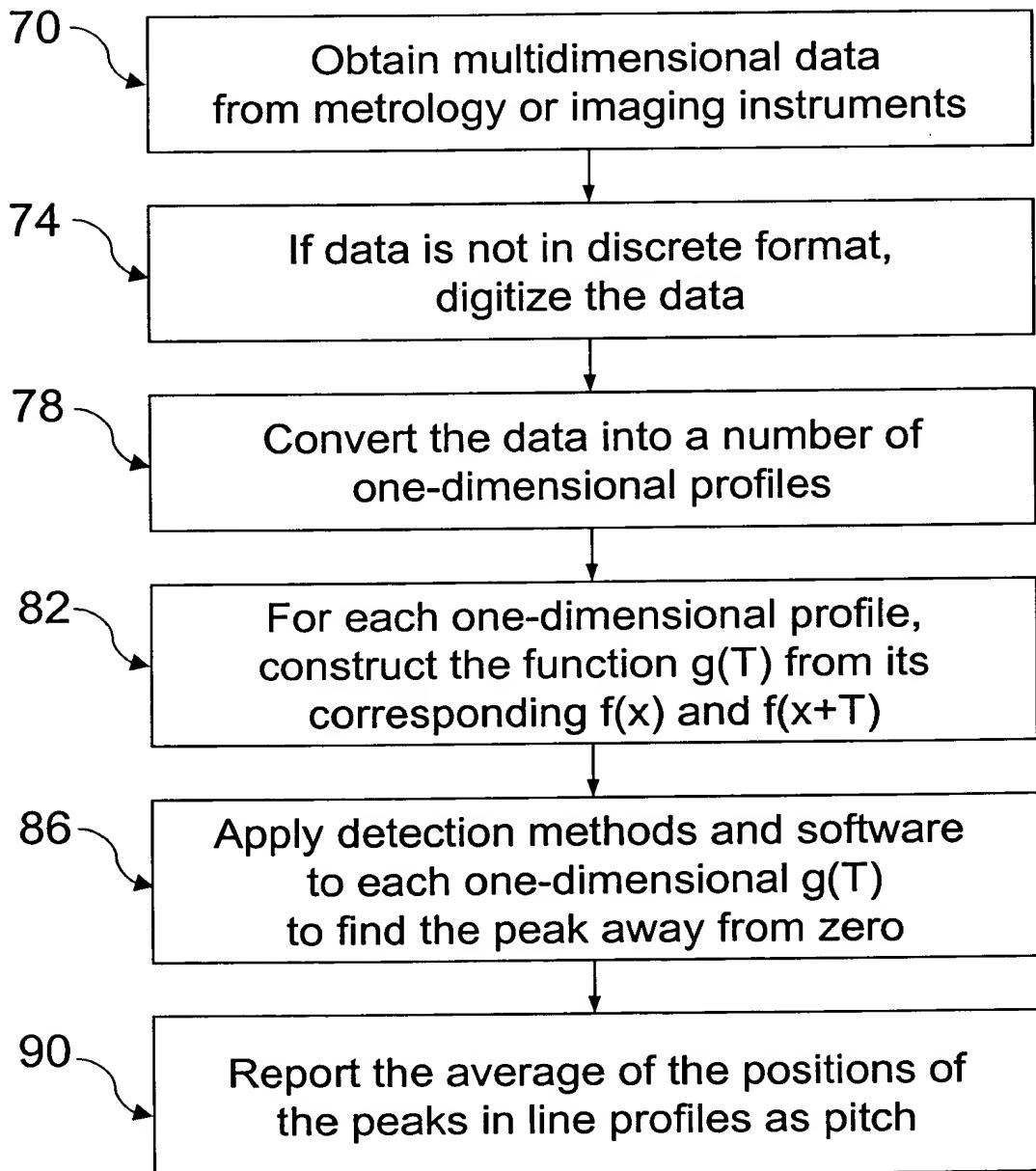


FIG. 4

Performance Comparison - Pitch Measurement Precision Present Method versus Existing Algorithm

	Pitch Measurement (nm)							
	Existing Algorithm, Commercially Available Scanning Electron Microscope							
Meas. # 1	Meas. # 2	Meas. # 3	Meas. # 4	Meas. # 5	Meas. # 6	Meas. # 7	Meas. # 8	
Site 1, Cycle 1	699.1	701.2	699.9	700.2	700.0	700.1	699.3	698.5
Site 2, Cycle 1	701.2	699.7	700.7	701.6	702.1	701.7	701.3	700.3
Site 3, Cycle 1	704.3	703.2	703.0	703.5	702.6	702.7	703.6	701.8
Site 4, Cycle 1	696.9	695.1	695.5	695.2	696.2	695.0	694.7	695.3
Site 5, Cycle 1	699.7	698.2	699.0	698.8	699.2	700.2	698.6	701.0
Site 6, Cycle 1	699.7	699.0	701.9	699.5	699.1	701.1	699.3	699.7
Site 7, Cycle 1	695.5	696.2	694.9	696.0	695.7	695.1	695.8	695.8
Site 8, Cycle 1	703.6	704.3	704.9	704.2	704.5	702.9	703.2	703.6
Site 1, Cycle 2	698.4	697.9	698.4	697.5	698.2	698.3	698.9	698.1
Site 2, Cycle 2	696.9	696.8	696.3	697.3	696.4	697.4	697.1	697.8
Site 3, Cycle 2	700.2	698.7	699.2	699.0	699.3	699.0	699.1	699.5
Site 4, Cycle 2	697.6	697.4	697.8	697.8	697.2	697.6	697.3	697.7
Site 5, Cycle 2	693.6	694.1	693.0	693.3	694.0	693.5	693.6	693.4
Site 6, Cycle 2	699.4	700.8	701.4	699.3	700.2	699.9	700.3	700.1
Site 7, Cycle 2	700.1	700.8	700.5	699.9	699.4	700.3	699.0	699.7
Site 8, Cycle 2	697.7	696.7	697.4	697.8	697.9	697.3	697.4	698.1

Average: 698.8 Total Variance: 7.35

Total Pitch Measurement Precision - Three Standard deviations (nm): 8.13

	Pitch Measurement (nm)							
	Present Method - Calculated from the identical experimental scan profiles as in above							
Meas. # 1	Meas. # 2	Meas. # 3	Meas. # 4	Meas. # 5	Meas. # 6	Meas. # 7	Meas. # 8	
Site 1, Cycle 1	700.48	700.35	700.37	700.36	700.34	700.23	700.28	700.26
Site 2, Cycle 1	699.86	700.07	699.61	699.82	699.83	700.10	700.03	700.05
Site 3, Cycle 1	699.76	699.63	699.60	699.50	699.43	699.45	699.51	699.33
Site 4, Cycle 1	700.01	700.07	699.73	699.95	699.88	699.82	699.82	699.73
Site 5, Cycle 1	699.03	699.29	699.06	699.13	699.12	699.01	699.01	699.20
Site 6, Cycle 1	701.22	701.28	701.41	701.12	701.28	701.35	701.34	701.45
Site 7, Cycle 1	698.97	698.88	698.66	698.91	698.79	699.00	698.67	698.58
Site 8, Cycle 1	700.02	700.00	699.69	699.66	699.65	699.60	699.23	699.45
Site 1, Cycle 2	698.35	698.18	698.49	698.32	698.22	698.53	698.64	698.60
Site 2, Cycle 2	699.84	699.61	699.49	699.61	699.37	699.68	699.69	699.80
Site 3, Cycle 2	699.49	699.42	699.38	699.39	699.38	699.40	699.19	699.24
Site 4, Cycle 2	699.56	699.98	699.81	699.99	699.71	699.92	700.03	699.56
Site 5, Cycle 2	699.51	699.29	699.45	699.25	699.23	699.36	699.22	699.29
Site 6, Cycle 2	700.30	700.29	700.25	700.19	700.22	699.89	700.16	700.02
Site 7, Cycle 2	701.71	701.57	701.75	701.67	701.73	701.53	701.41	701.33
Site 8, Cycle 2	699.98	699.68	699.79	699.57	699.76	699.60	699.49	699.42

Average: 699.8 Total Variance: 0.64

Total Pitch Measurement Precision - Three Standard deviations (nm): 2.40

FIG. 5